use artificial sites only exceptionally (Witherby *et al.* 1940), whereas the African Pied Wagtail does so habitually in East Africa.

In his extensive experience, the late Capt. C.R.S. Pitman (*in litt.*) found that 85 per cent. of nests of the smaller African passerines suffer predation by reptiles, small rodents and other non-human predators; and many more nests are washed out by heavy rains. Thatched roofs often harbour rodents and reptiles but many artificial sites are dry and relatively free of predators. The breeding season of the coastal sunbirds discussed is prolonged, with records in all months except February-March; but there is an evident peak in the wettest months of April-June, which follow the dry, hot months of December-March. Laying peaks in May, which is the wettest month, with over 250 mm recorded in most years, and as much as 1043 mm in May 1922. Few eggs or young (of all families) which we find in May survive these downpours.

Sunbirds are attracted to the vicinity of buildings by the planting of flowering shrubs, and it is noteworthy that hummingbirds (Trochilidae) have a similar habit of nesting in buildings in parts of the New World (P.C. Lack *in litt.*). It seems likely that this habit developed primarily as a means of escaping heavy rainfall by building nests under a roof outside a building, or in its incipient form, merely using a wall for shelter from the prevailing wind or wind-blown rain. On the Kenya coast, many cottages to-let and holiday homes are empty during the wet off-season months, and there is frequently free access for small birds through wire mesh. At times, an empty cottage becomes occupied while the bird has eggs or young so that the bird is forced to tolerate the presence of humans or desert the nest. Regular nesting in an occupied house probably began as a forced co-existence after such a vacant period, but may develop into a highly successful symbiotic relationship when the human occupants actively protect the nesting birds in return for the pleasure derived from their presence.

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(Received 9 February 1977, additions made 27 June 1977)

WEIGHTS OF BIRDS IN WESTERN AND COASTAL KENYA: A COMPARISON

P.L. Britton

Weights of birds are used with increasing frequency in studies of bird migration, energetics and ecology. Comparatively few published data are available for African species - systematists have used less variable parameters such as wing-length. Any recorded variation in the weight of an individual bird is likely to result from a complex interaction of several variables, notably breeding and moult cycles, migration and the diurnal rhythm associated with weight loss at night and feeding activity. Within any wide-ranging species, weights are likely to vary both geographically and altitudinally, though the few data available for African birds show that the patterns of variation are not always predictable or consistent in terms of Bergmann's ecogeographic rule (see Britton 1972). Most of the support for this empirical correlation is derived from studies of Palaearctic birds, though there are precedents from the tropics, for example weights, wing-lengths and bill-lengths positively correlated with altitude and mean annual rainfall in Jamaica (Diamond 1973). However, Salt (1963) preferred the explanation of a species centre, identified by the lowest body weight, as the centre of evolutionary origin in his important study of clinal variation in body size of western Nearctic birds.

As a part of routine ringing activities, large numbers of birds have been weighed in the Siaya and Kisumu districts of Nyanza Province, straddling the equator in western Kenya at 1160-1550 m a.s.l., and in the Coast Province north of Mombasa, at or near sea-level at 3-4° S. Only a minority of species have been ringed in reasonable numbers in both areas, and the same race is involved in only *Tchagra senegala*, *Prinia subflava*, *Nectarinia bifasciata* and *Lagonosticta senegala*[1]. Nevertheless, the few species in the systematic list which follows show a fairly consistent pattern of variation, with coast birds weighing less in all species other than the two *Euplectes*. If variation follows Bergmann's rule, heavier birds would be expected both at higher altitudes and higher latitudes. Predictably, the dominant pattern of variation exhibited by these randomly selected species suggests that altitudinal variation is more important than geographical variation over this trivial latitude difference.

The small body size of coastal populations is most marked in *Cossypha heuglini*, *Nectarinia olivacea* and *Ploceus cucullatus*, and might be considered predictable from wing-length data (extremes only) in standard works like Mackworth-Praed & Grant (1960); though the fact that Nyanza *C. heuglini* are 51 per cent. heavier, without overlap, could not be predicted from wing-lengths of 92-111 against 81-97 (males) and 85-97 against 86-87 mm (females). Extreme figures without sample size are always unsatisfactory, whether they are weights or wing-lengths, and wing-lengths in such standard works are usually gathered from too large an area to be useful. Coastal *Euplectes* are predictably large, in that coastal *E. axillaris* has a heavier bill (White 1963), and wings of coastal *E. hordeaceus* average somewhat longer (Jackson 1938).

Overall, the data presented show that weights from geographically distant localities, or from localities at substantially lower or higher altitudes, should be used with caution in assessing avian biomass in a particular locality or habitat. Variation from locality to locality may well be greater than diurnal or other variation at any one locality.

SYSTEMATIC LIST

Coast and Nyanza birds are listed as sets C and N respectively and *N. olivacea* from Kakamega Forest (close to Nyanza localities at 1700 m) are listed as set K. Weights are in grams, taken on Pesola spring balances, mainly correct to the nearest 0.1 g. The majority of weights were taken during the first four hours of daylight, and to compensate for diurnal rhythm the few evening weights have been reduced by 5 per cent. (personal data show this to be the most appropriate figure, despite the fact that small passerines often lose as much as 10 per cent. of evening body weight overnight). Some species are listed by sex (m and f) and all known immatures are excluded. Each set includes the number of individuals weighed, followed by range, with mean ± standard deviation in parentheses. Only one weight (the first taken) is included for each individual. If a level of significance is given, indicating

[1] English names are given in the systematic list.

that the two sets have been compared statistically, it is derived from a t-test on the difference of means. Order and nomenclature follow White (1962a, 1962b, 1963, 1965).

COLIUS STRIATUS Speckled Mousebird
C 22, 36.8-52.5 (46.3 ± 4.00); N 80, 42-64 (52.4 ± 4.9); $P<0.001$.

TCHAGRA AUSTRALIS Brown-headed Bush Shrike
C 3, 31.2-33.8 (32.2 ± 1.4); N 19, 34.5-42 (37.0 ± 1.6); $P<0.001$.

TCHAGRA SENEGALA Black-headed Bush Shrike
C 5, 43.3-50.8 (48.3 ± 3.2); N 10, 47.5-53 (49.6 ± 1.9).

LANIARIUS FERRUGINEUS Tropical Boubou
C 32, 38.8-54 (46.8 ± 3.9); N 7, 49-66 (57.6 ± 5.2); $P<0.001$.

COSSYPHA HEUGLINI White-browed Robin Chat
C 4, 25.4-30.2 (27.7 ± 2.2); N 45, 34.5-51 (41.7 ± 4.0); $P<0.001$.

PRINIA SUBFLAVA Tawny-flanked Prinia
C 5, 7.5-8.7 (8.08 ± 0.45); N 31, 7.4-10.8 (9.07 ± 0.75); $P<0.001$.

CAMAROPTERA BRACHYURA Grey/Green-backed Camaroptera
C 65, 7.8-10.5 (9.29 ± 0.75); N 74, 9.7-13.0 (11.45 ± 0.85); $P<0.001$.

ANTHREPTES COLLARIS Collared Sunbird
C(m) 11, 6.4-7.6 (6.84 ± 0.38); N(m) 5, 7.5-9.0 (8.30 ± 0.64); $P<0.001$.
C(f) 6, 5.8-8.5 (6.73 ± 1.01); N(f) 1, 8.0.

NECTARINIA OLIVACEA Olive Sunbird
C(m) 26, 7.5-9.9 (8.36 ± 0.56); K(m) 3, 11.0-12.3 (11.5 ± 0.76); $P<0.001$.
C(f) 21, 7.0-9.2 (7.83 ± 0.55); K(f) 4, 9.5-10.9 (10.08 ± 0.59); $P<0.001$.

NECTARINIA BIFASCIATA Little Purple-banded Sunbird
C(m) 6, 6.5-7.2 (6.97 ± 0.24); N(m) 12, 6.5-8.1 (7.13 ± 0.58).
C(f) 3, 6.0-6.5 (6.23 ± 0.25); N(f) 8, 6.0-6.5 (6.28 ± 0.18).

PLOCEUS OCULARIS Spectacled Weaver
C(m) 2, 21.4-24.7 (23.1 ± 2.3); N(m) 22, 24.0-28.7 (26.1 ± 1.3).
C(f) 6, 19.5-25.2 (22.9 ± 1.9); N(f) 16, 21.0-26.1 (24.0 ± 1.6).

PLOCEUS CUCULLATUS Black-headed Weaver
C(m) 3, 36.0-37.5 (36.7 ± 0.8); N(m) 48, 37.5-50 (45.2 ± 2.4); $P<0.001$.
C(f) 3, 27.4-29.5 (28.6 ± 1.1); N(f) 62, 32.5-43.5 (36.6 ± 2.5); $P<0.001$.

EUPLECTES AXILLARIS Fan-tailed Widow Bird
C(m) 3, 27.5-30.8 (29.1 ± 1.7); N(m) 69, 23.0-29.2 (26.5 ± 1.4); $P<0.01$.
C(f) 2, 22.0-22.8 (22.4 ± 0.6); N(f) 84, 18.2-24.9 (20.9 ± 1.5); $P<0.001$.

EUPLECTES HORDEACEUS Black-winged Red Bishop
C(m) 3, 23.5-25.2 (24.1 ± 1.0); N(m) 12, 18.0-22.9 (20.4 ± 1.4); $P<0.001$.
C(f) 3, 18.2-18.8 (18.5 ± 0.3); N(f) 6, 17.2-19.5 (18.4 ± 0.9).

ESTRILDA BENGALA Red-cheeked Cordon-bleu
C(m) 13, 7.8-9.5 (9.18 ± 0.51); N(m) 12, 9.2-11.0 (10.16 ± 0.66); $P<0.001$.
C(f) 3, 8.1-9.1 (8.53 ± 0.51); N(f) 13, 9.0-11.5 (10.35 ± 0.65); $P<0.001$.

LAGONOSTICTA SENEGALA Red-billed Firefinch
C(m) 9, 6.5-7.9 (7.19 ± 0.44); N(m) 76, 7.1-9.2 (8.27 ± 0.52); $P<0.001$.
C(f) 9, 6.5-8.5 (7.46 ± 0.66); N(f) 52, 7.0-10.7 (8.39 ± 0.61); $P<0.001$.

LONCHURA CUCULLATA Bronze Mannakin
C 6, 7.4-8.5 (8.07 ± 0.40); N 97, 7.7-11.8 (9.16 ± 0.83); $P<0.001$.

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(Received 25 March 1977)

THE DISTRIBUTION OF SOME FALCONS AND PLOVERS IN EAST AFRICA

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While preparing maps and species' accounts for the falcons (Falconidae) and plovers (Charadriidae) in the forthcoming *Atlas of speciation in African Non-Passerine birds*, I discovered a number of records which amplify or clarify their distribution in East Africa as contained in such standard works as White (1965) and Williams (1967, 1969). I hope that publication of the more interesting of these will prompt East African ornithologists to document any unpublished sight records which add further to the pictures presented. As Forbes-Watson (1971) is not available in Zambia, my nomenclature follows White (1965).

POLIHIERAX SEMITORQUATUS Pygmy Falcon
White (1965) records this species in Tnazania to as far south as the (Central) railway line. To be more exact, in the west it occurs south to Mwanza (Bowen 1931) and Wembere Steppe (Reynolds 1968), and further east to 230 km south of Mt Kilimanjaro (Fuggles-Couchman & Elliott 1946) and Mkomasi (specimen in the University Museum of Zoology, Cambridge, England examined by me). Much further south there are two sight records which may well be correct, but which require substantiation. In the south-west there is a single record from the eastern escarpment of Lake Rukwa (Vesey-Fitzgerald & Beesley 1960), and in the far south the species is reported from Chidya, Masasi by Tweedy (1966). Both localities are well outside the normal range of the usual host of this falcon, the White-headed Buffalo Weaver *Dinemellia dinemelli* (Map 372 in Hall & Moreau 1970).

FALCO FASCIINUCHA Taita Falcon
Mann (1976) records this falcon from a few localities in Kenya, including Lokitaung in north Turkana and Amboseli; fuller details of these records are of interest, and have been supplied by the observer, J.G. Williams (*in litt.*). He found at least two pairs resident in a 10 km line of high larva cliffs, to the west of the track from Lokitaung northwards to Liwan and Lokomarinyang in Ilemi Triangle on the Sudan border. These birds preyed on Red-billed Queleas *Quelea quelea* which nested in large colonies in nearby *Acacia mellifera* bush. In addition, Williams reports twice seeing adult Taita Falcons near the Ol Turkai swamp in Amboseli; these would presumably be wanders from Mt Kilimanjaro, where they may be resident. Mann (1976) also mentions, without details, the occurrence of this species at Malindi. The late Capt. C.R.S. Pitman (*in litt.*) considered that he saw Taita Falcons on the Kenya coast at both Malindi and Diani Beach near Mombasa. In view of his considerable experience of the species most likely to be confused, the African Hobby *F. cuvieri*, one cannot dismiss these records out of hand, but there are no suitable cliffs in these